

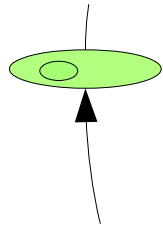
ELG Pond Committee Report September 2014



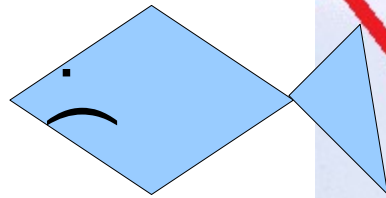
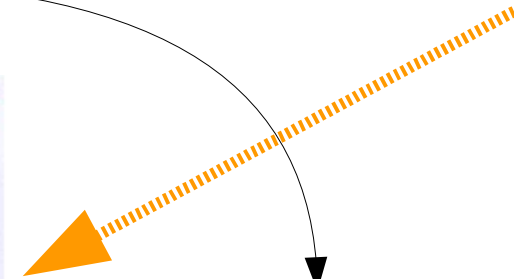
Besides making the pond unpleasant for swimmers, watermeal floats on top of the water all summer, blocking light and air to the fish below.

Watermeal floats because it inflates from its own photosynthesis.

Which rise up and reclaim the surface. Good for them, bad for us.



When the sun returns in the Spring, it gets down into the water just long enough to revive the watermeal.



In Fall, as photosynthesis slows down, the watermeal deflates and sinks. It hides on the bottom all winter without dying.



ELG Pond Committee Mission

To restore the pond to its original, healthy condition for swimming and other recreational use.

- This will require Research,
- Action,
- And Maintenance

We can no longer take the pond for granted.

Watermeal Must Go!

- But it's an invasive, opportunistic species
- Population can double in 2 days
- A few grains of it can quickly infest a sick pond
- It can come in on:

Waterfowl

Canoes or Swim Toys

People

- A little left behind after treatment can grow back
UNLESS the pond's health is also improved

Expertise is Hard to Find

- Scott has been lovingly maintaining the pond for years, but it's changing
- Our County Extension Agent (PhD Biologist from NCSU) focuses on farmers' problems
- Pond companies, fish companies and chemical companies have their own agendas
- Our new neighbor Rebekah and one of her friends have some experience
- Other states' Extension Services have info
- In all, we get to figure it out ourselves

The Perils of Pond Care

- Scott has been maintaining the pond for years
- But in the last 5-7 years, the pond has gotten worse and worse
- What is happening? Possibilities include:
 - Leaf litter buildup hosting bad bacteria
 - Less water coming in from the Spring
 - More fertilizer drainage

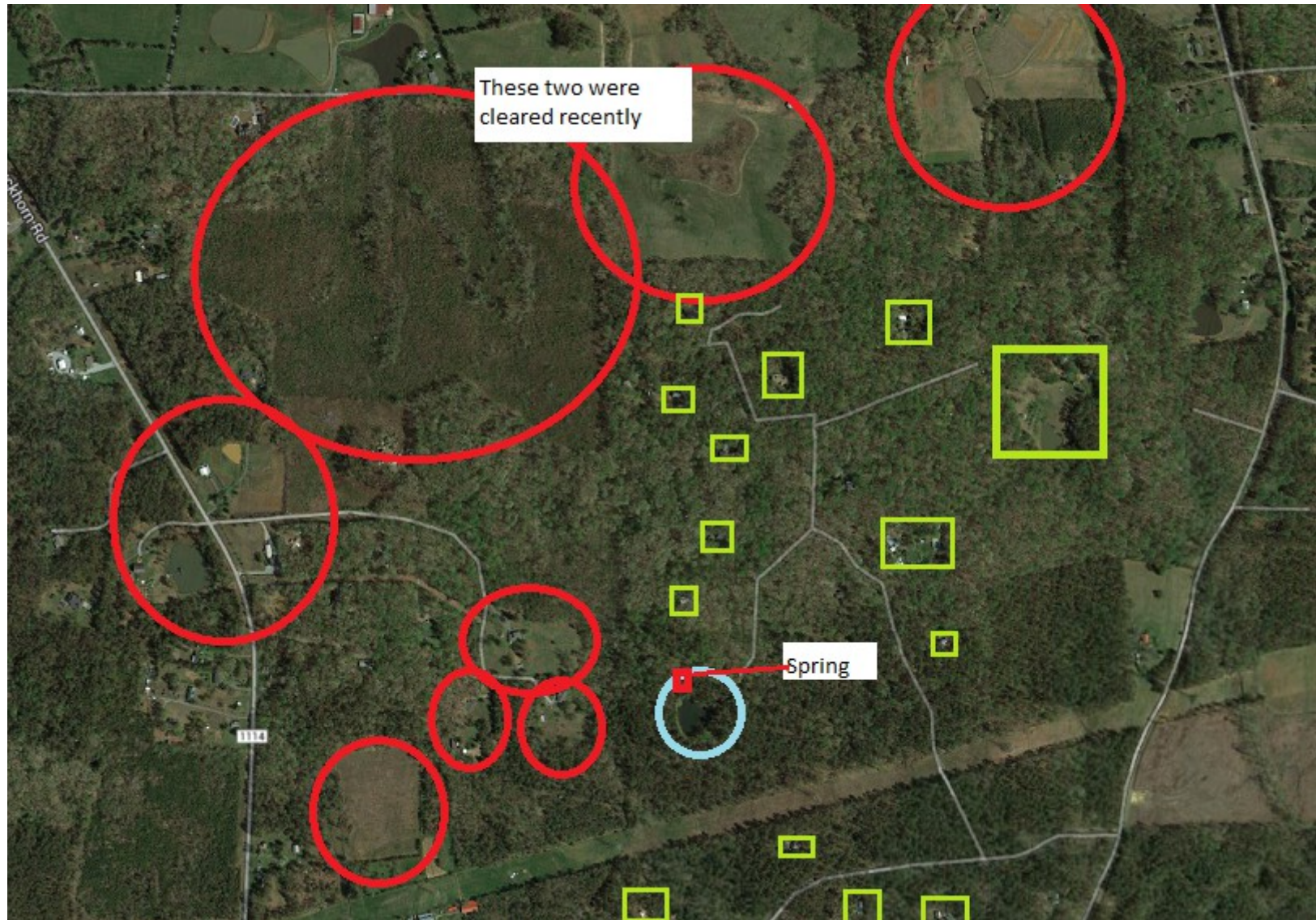
The Pond's Decline

Watermeal is the last straw, but not the first problem. In the last 5-7 years, we have had:

- Floating brown algae
- Plagues of snakes and leeches
- Rotten egg smell
- Fish kill or overfishing
- Watermeal
- Low pH, Low oxygen

The Spring feeding our pond is very acidic with high levels of nitrogen fertilizer. Could that be coming from fertilized fields and lawns around us?

>25 acres have been cleared at the Camp and behind Mark's house in the past 5-7 years.



Overfertilized, stagnant ponds are most vulnerable to watermeal infestation.

Alternative: Herbicide

There is an old saying in the technology business: Nobody ever got fired for picking IBM. Herbicides are the IBM of pond management.

We have a recommendation from a biotech company to dose the pond with:

- 1x 32oz Fluridone at 651.00
- 2x 25lb pails of NT-MAX pond digester @266.00 each
- 1x gallon Aquashade dye at 37.00

Note: Aquashade is on the shelf at Tractor Supply⁸

Alternative: Herbicide (2)

Purdue U says:

The nice thing about fluridone is that when it works, it really works well. Retreatments are not necessary, and sometimes the control will last a second year (although it may be helpful to apply a pint of Sonar* or Avast!™ at the beginning of the second season to kill any plants that may have survived).

As a general rule, fluridone is effective on most watermeal treatment sites, but sometimes there is no effect. The reason for this is as yet unknown. According to Sonar* guidelines, the dose for watermeal should be 1.5 quarts per surface acre if the average depth is more than 5 feet. Again, it is critical that there be no outflow from the pond and that the treatment be split.

www.btny.purdue.edu/pubs/apm/apm-2-w.pdf

But we are the Environmental Land Group and most members of the Pond Committee would prefer to avoid herbicide for esthetic reasons alone. Adding the fact that it's not guaranteed, and the pond still has other issues, we voted to defer herbicide treatment.

Alternative: Bacteria Only

There is a wide range of pond bacteria treatments to break down ammonia and other organic waste. That reduces nitrogen and denies it to the watermeal.

Bacteria treatments also inhibit unwanted bacteria in the leaf muck, freeing more oxygen for the fish.

Bacteria is part of the Herbicide package. Since we can't apply Herbicide until Spring 2015, the Pond Committee finds that we should apply bacteria now and measure nitrogen levels again before winter.

Alternative: New Drainpipe

We had a simple drainpipe for a long time.



In good water years, the water trickles slowly into the pipe, along with floating material. This **may** remove **some** watermeal and mosquito eggs.

In bad water years, the pipe has no effect.

The person who fixed our drainpipe owes Trace a quote on replacing it.

Alternative: Electric Fountain

An electric fountain can be improvised from a basement pump and a sprinkler head. The problem is how to power it?

To run an extension from the nearest house, we need 2000 feet of 1 gage wire. That costs \$1000 new.



Maia and Senga have volunteered to host this power. ELG voted to reimburse their electricity cost at the 2013 meeting.

Alternative: Walk Away

Even if we get rid of the watermeal, we still have a pond that is far from good health. Even though people have swum safely here for 30 years plus, new health concerns have arisen in recent years.

Google this:

- Swimming pond bacterial infection
- Swimming pond staph infection
- Brain eating amoebas (rare but real)

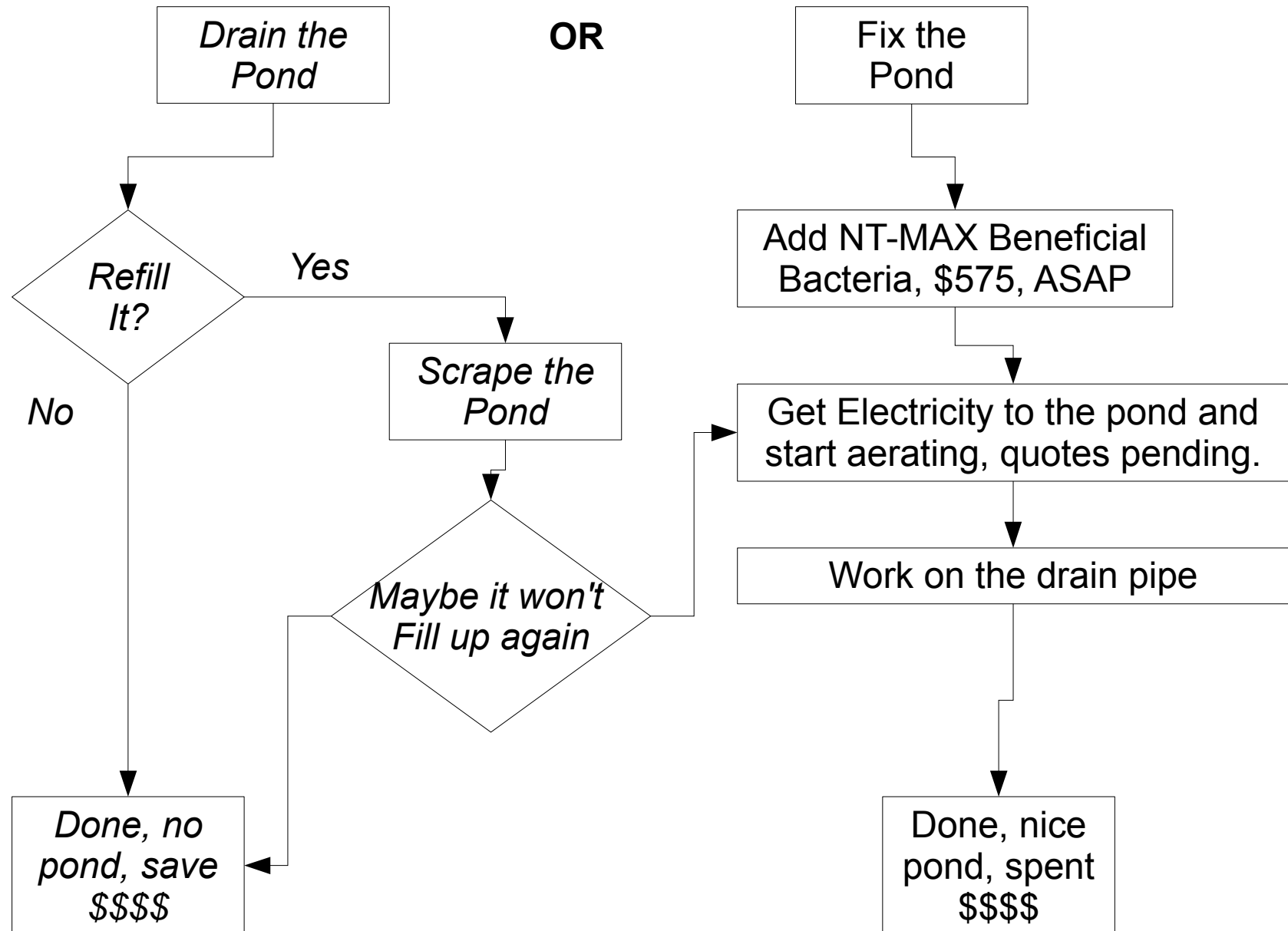
One could make a case that it's time to let the pond go.

	PRO	CON	COST
Herbicide	Well known, conventional Treatment. Not toxic to animals	Fails once in a while Does not prevent reinstation	\$1250
Bacteria	Part of the Herbicide regime, beneficial bacteria supposedly take up fertilizer, denying it to watermeal.		\$575 for bacteria portion of Herbicide package
	Seems green Root cause fix	Might not do anything	
Drainpipe	Used to be enough	Might not be enough with acid fertilizer filling the pond	??? Guess \$1000
Electrical	The only successful nonchemical recoveries I saw in my research were from fountains and pH correction.		\$1000 for wire, less with scrounging
	Healthy ponds inhibit watermeal	There might still be some at the edges	
Dredge or Drain	If the land only gives us water that's bad for ponds, maybe it's time to quit.	Fish Investment in Liming	Letting the water out is free.

Alternatives to Extension Cord from Nearest House For Fountain and Filter Solutions

	PRO	CON	COST
Gas Engine	<p>Tractor Supply has water lifting pumps for \$300. One of those plus a sprinkler head would help a lot.</p> <p>Fairly cheap and self contained</p>	<p>Loud</p> <p>Possible spills</p>	\$300 - \$500
Solar			\$3000 plus
New Piedmont Service			<p>Quote Pending</p> <p>Guess \$5,000</p>

These are the Big Choices



Pond Committee Rejects This Path

Pond Committee Recommends This Path